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side; such that said nucleic acid is integrated into said mammary gland cell's genome.

SUB E2) 26. (New) A transgenic farm animal having a genome, the genome comprising a recombinant nucleic acid encoding a polymeric immunoglobulin receptor (pIgR) protein, wherein said protein is capable of transporting an immunoglobulin protein across the basolateral side of an epithelial cell's apical side, resulting in over-expression of the immunoglobulin protein on the epithelial cell's apical side in comparison to another immunoglobulin protein located on the epithelial cell's basolateral side.

SUB D2 27. (New) The transgenic farm animal of claim 26, wherein the immunoglobulin protein is selected from the group consisting of IgM, IgA, IgG1 and IgG2.

28. (New) The transgenic farm animal of claim 26, wherein the immunoglobulin protein located on the epithelial cell's basolateral side is IgG.

C4 29. (New) The transgenic farm animal of claim 26, wherein said transgenic farm animal over-expresses said pIgR protein at least 10-fold higher than the expression of the pIgR protein in the wild-type of said farm-animal.

SUB E2) 30. (New) A method of making the transgenic farm animal of claim 26, said method comprising:

producing a DNA construct comprising a nucleic acid encoding a pIgR protein operably linked to a promoter capable of driving expression of said pIgR protein in an epithelial cell; introducing said DNA construct into fertilized eggs; and implanting the fertilized eggs comprising said DNA construct into a pseudopregnant female farm animal, thereby producing the transgenic farm animal according to claim 26.

31. (New) The method according to claim 30, wherein said promoter capable of driving expression of said pIgR protein in an epithelial cell is a casein promoter.

32. (New) A method of collecting an immunoglobulin from the transgenic farm animal of claim 26, comprising:

providing a transgenic farm animal from claim 26, whose genome comprises a recombinant nucleic acid encoding a polymeric immunoglobulin receptor (pIgR) protein, which said protein is capable of transporting an immunoglobulin protein across the basolateral side of an epithelial cell to the epithelial cell's apical side, resulting in over-expression of the immunoglobulin protein on the epithelial cell's apical side compared to another immunoglobulin protein located on the epithelial cell's basolateral side; and
collecting milk comprising said immunoglobulin protein from the mammary gland of said transgenic farm animal.

33. (New) The method according to claim 32, further comprising isolating said immunoglobulin protein from the milk.

34. (New) The method according to claim 32, wherein collecting milk comprising said immunoglobulin protein comprises collecting milk comprising either IgM, IgA, IgG1 or IgG2.

35. (New) The method according to claim 31, comprising administering a protein capable of enhancing the expression of pIgR in the transgenic farm animal prior to collecting milk from the mammary gland, the protein selected from the group consisting of interferon- γ , interleukin-1, interleukin-4, and tumor necrosis factor- α .

36. (New) The method according to claim 31, comprising administering an antigen to said farm animal prior to collecting the milk from the mammary gland.